

Appl. No. 10/686,601
Amdt. dated January 18, 2006
Reply to Office action of October 20, 2005
Atty. Docket No. AP941US

Amendments to the Specification:

Please replace the paragraph beginning at page 8, line 9 with the following amended paragraph:

-- Figure 1 shows a light source unit ~~[[10]]~~ comprising a housing 12 with a side panel and a top panel removed to expose the components inside the housing 12. A generally C-shaped support 14 having spaced first and second flanges 16 and 18 is mounted in the housing 12 with the outermost surface of flange 16 secured to a rear wall 20 of the housing 12 so that a ~~[[bight]]~~ web portion 22 of the support 14 extends in cantilever fashion perpendicularly to the rear wall 20 and the other flange 18 depends from its distal end. A hole 24 extending through the flange 16 registers with a hole in the rear wall 20 and a slot 26 extends laterally from hole 24 to the edge of the flange 16. Screws 28 extend through clearance holes in the lower part of flange 16 to engage in screwthreaded holes in the upper part of flange 16 and serve to draw the two parts together. One end of a light guide holder 30 extends into hole 26 and is clamped therein by tightening of screws 28. The body of light guide holder 30 protrudes in cantilever fashion from an internal surface of flange 16. A cylindrical hole 32 through the portion of light guide holder 30 adjacent and in the flange 16 is sized to receive a ferrule 34 coupled to a light guide 36, shown detached in Figure 1 to facilitate the description, and thus constitutes a light guide port. Where the light guide 36 is the liquid-filled type, the ferrule 34 will have a central transparent window for example of quartz, to receive incident light and convey it to the liquid-filled section of the light guide. --

Please replace the paragraph beginning at page 11, line 1 with the following amended paragraph:

-- The cone axis CA of conical baffle 38 and the cylindrical axis LA of the light guide holder 30 are coincident and define an optical axis of the light source unit ~~[[10]]~~. The lengths of the holder 30 and the conical baffle 38 are such that a small gap 104 is left between the adjacent surfaces of the two baffles 40 and 86. --

Please replace the paragraph beginning at page 11, line 23 with the following amended paragraph:

-- The first compartment 72 is partitioned by a second dividing wall 108 to form a lamp compartment 110 containing the lamp 48, support 14, conical baffle 38 and light guide holder 30. The connector block 64 is mounted outside the lamp compartment 110. The dividing wall 108 has a first section 108A extends forwardly from a distal edge of flange 16 and generally parallel to the bottom of the housing 12, ending at a position between the lamp lead connector bracket 64 and the lamp 48 and a second portion 108B extending from that distal end of the first section 108A, curving around the lamp 48, and then extending generally parallel to the top of the housing 12, alongside, but spaced from, the ~~[[bight]]~~ web portion 22 of support 14. When the side panel of the housing 12 is attached, it abuts the edges of the dividing wall 108 to close off the lamp compartment 110. --

Please replace the paragraph beginning at page 12, line 4 with the following amended paragraph:

-- A hole 112 is provided in dividing wall section 108A at a position adjacent the lamp 44 and a first fan 114 mounted to the dividing wall section 108A draws cooling air into housing 12 by way of vents (not shown) in the side panel(s) (not shown) and then blows it directly onto lamp 48 by way of hole 112. An exhaust duct 116, of generally rectangular cross-section, extends between the ~~[[bight]]~~ web portion 22 of the support 14 and the straight portion of dividing wall section 108B.

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The exhaust duct 116 has short sidewalls 118 extending between the dividing wall section 108B and the adjacent surface of support 14 but otherwise the exhaust duct is formed by the surface of support 14, the opposed portion of dividing wall section 108B, the adjacent section of longitudinal dividing wall 70 and the side panel. --

Please replace the paragraph beginning at page 12, line 21 with the following amended paragraph:

-- It should be noted that cooling air passing through the exhaust duct 116 is in direct contact with the adjacent surface of the support 14 ([bight] portion 22), which is more efficient than would be the case if a duct wall were interposed. --

Please replace the paragraph beginning at page 12, line 24 with the following amended paragraph:

-- If desired, an opening may be provided in the [bight] web portion 22, near the rear wall 20, to exhaust air from the vicinity of the light guide holder 30 directly. --

Please replace the paragraph beginning at page 13, line 1 with the following amended paragraph:

-- The front panel 80 carries the usual display electronics, control switches, and so on, which are not shown or described in detail with a view to simplification. The multi-function support assembly is a particularly simple and efficacious approach to heat control. Typically, the end of the light guide comprises a quartz rod about 3 mm in diameter surrounded by a metal ferrule about 6 mm in diameter. If light were allowed to impinge upon the ferrule, it would cause heating, which would negate cooling of the ferrule and light guide by the cooling air. The two-stage light baffle arrangement (40, 86) progressively blocks heat by selectively passing light rays generated by the lamp 48 while keeping secondary sources of heat spatially removed from the entrance face of the light guide. Heat generated by the blocked light is conducted efficiently away from the light guide. Moreover, forcing the light guide ferrule against the light baffle 86 by means of the retaining/positioning spring 96 allows the baffle to serve as a heat sink. The conical baffle 38, which provides the first-stage light restriction, restricts the light drastically and so absorbs most heat, but can conduct it away and dissipate it efficiently because it is connected to [bight] web portion 22 by a path which has a relatively high thermal conductivity. The gap 104 between the two baffles 40 and 86 provides thermal insulation between conical baffle 40, where most of the heat will be generated, and baffle 86, which acts dually as a heat sink and heat conduit. Thus, heat generated in the baffles 40 and 86 is conducted to the [bight] web portion 22 which is actively cooled. --